Claim Amendments

Amend the claims to read as follows:

1. (currently amended) A porous ceramic oxide membrane support ~~for a gas separation membrane~~ formed by sintering a green body containing refractory grains ~~of at least one simple or compound ceramic oxide~~ and grains of at least one reactive binder precursor, ~~wherein~~comprising:

~~a)~~ refractory grains of at least one simple or compound ceramic oxide, wherein the coefficient of thermal expansion of the refractory grains is greater than about $8x10^{-6}/°$ C.; and

~~b)~~ at least one reactive binder precursor comprising grains of an element in a non-oxidized state;

wherein the green body is sintered in an oxidizing atmosphere, and during sintering the grains of the reactive binder precursor ~~are~~ reacted with the oxidizing atmosphere ~~at least one gaseous, liquid, or solid phase reactant~~ to form a reaction bond to bind the refractory grains; and

~~c)~~ wherein the mean pore size of the membrane support is greater than about 1 micron.

2. (canceled)

3. (original) The support of claim 1 in which the support configuration is selected from the group consisting of multi-channel monoliths, tubular elements, hollow fibers, and plate structures.

4. (currently amended) The support of claim 1 in which the mean particle size of the refractory grains is in the range of about 5 to about 200 microns.

5. (original) The support of claim 1 in which the refractory grains are selected from the group consisting of alumina, titania, zirconia, magnesia, forsterite, spinel, and mixtures thereof.

6. (original) The support of claim 1 in which the change in volume of the sintered ceramic support from that of the green body is less than about 5%.

7. (canceled)

8. (original) The support of claim 7 in which the element is selected from the group consisting of aluminum, silicon, titanium, zirconium, and mixtures thereof.

9. (currently amended) The support of claim 1 in which the reactive binder precursor ~~contains~~further comprises grains of at least one ceramic compound that react with the element grains in the oxidizing atmosphere to form the reaction bond.

10. (canceled)

11. (original) The support of claim 1 in which the grain size of the reactive binder precursor is less than about 10 microns.

12. (canceled)

13. (currently amended) A method of forming a porous ceramic oxide membrane support ~~of ceramic oxide material~~, comprising;

a) making a mixture ~~containing~~comprising refractory grains of at least one simple or compound ceramic oxide with a coefficient of thermal expansion greater than about $8x10^{-6}/°$ C. and grains of ~~at least one~~ reactive binder precursor comprising at least an element in a non-oxidized state;

b) forming the mixture into a green body;

c) sintering the green body in an oxidizing atmosphere to react the grains of the reactive binder precursor with the oxidizing atmosphere ~~at least one gaseous, liquid, or solid phase reactant~~ to form a reaction bond to bind the refractory grains; and

d) cooling the sintered body.

14. (new) The support of claim 9 in which the reaction bond is selected from the group consisting of forsterite and spinel.

15. (new) The support of claim 1 in which the oxidizing atmosphere contains molecular oxygen or steam.

16. (new) A membrane device comprising the membrane support of claim 1 and a semipermeable membrane applied to the support.

17. (new) The membrane device of claim 16 in which the semipermeable membrane is selected from the group of membranes consisting of membranes suitable for microfiltration, ultrafiltration, nanofiltration, reverse osmosis, gas separations, vapor permeation and pervaporation